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FLIGHT SUMMARY

NON-EXTENSIBLE BALLOON OPERATIONS

6580TH TEST SQUADRON (SPECIAL)

JUNE 1950 TO OCTOBER 1954

HOLLOMAN AIR DEVELOPMENT CENTER

HOLLOMAN AIR FORCE BASE, NEW MEXICO

HISTORY PRIOR TO FLIGHT NUMBER ONE

The first plastic balloon was flown at Holloman Air Force Base on 3 July 1947 by an Air Materiel Command contractor, New York University. There was considerable plastic balloon activity by this same University and General Mills, Incorporated, during 1948 and 1949 at Holloman Air Force Base.

In 1949, Air Force personnel from Holloman Air Force Base first organized the present Balloon Unit. Flights were made with clusters of neoprene balloons during that year to study atmospheric composition and diffusion at high altitudes.

At the time that HAFB Number 1 was flown, the Balloon Unit was under Electronic and Atmospheric, Holloman Air Force Base. Since that time the same organization has been called Research Test Branch and is now the 6580th Test Squadron (Special).

FLIGHT SUMMARY
NON-EXTENSIBLE BALLOON OPERATIONS
6580TH TEST SQUADRON (SPECIAL)
HOLLOMAN AIR FORCE BASE, NEW MEXICO

HAFB NR	DATE	CONTRACTOR	MFG	BALLOON DIAM FT	MILS	LBS	EQUIPMENT WT LBS
1	21 JUL 50	MX-1277	GM	72.8	1.0	114	50.7
2	27 JUL 50	MX-1277	GM	72.8	1.0	114	50.7
3	10 AUG 50	MX-1277	GM	72.8	1.0	114	57.2
4	29 AUG 50	MX-1450	GM	72.8	1.0	109	84.3
5	29 AUG 50	MX-1450	GM	72.8	1.0	109	84.3
6	8 SEP 50	MX-1450	GM	72.8	1.0	115	61.5
7	16 SEP 50	MX-1011	GM	72.8	1.0	116	97.7
8	28 SEP 50	MX-1450	GM	72.8	1.0	110	100.0
9	29 NOV 50	MX-1450	WINZ	72.8	1.0	123	100.0
10	18 JAN 51	MX-1450	GM	72.8	1.0	110	100.0
11	26 JAN 51	MX-1450	WINZ	72.8	1.0	119	158.3
12	7 APR 51	AFCRC	GM	19.3	1.5	12	14.7
13	7 APR 51	AFCRC	GM	19.3	1.5	12	14.7
14	16 APR 51	AFCRC	GM	19.3	1.5	12	14.7
15	20 APR 51	AFCRC	GM	19.3	1.5	12	14.7
16	3 MAY 51	MX-1277	GM	72.8	1.0	128	100.0
17	8 MAY 51	AFCRC	GM	19.3	1.5	12	16.5
18	10 MAY 51	MX-1277	WINZ	72.8	1.0	128	100.0
19	24 MAY 51	AFCRC	GM	19.3	1.5	12	25.6
20	22 JUN 51	MX-1011	GM	72.8	1.0	128	98.0
21	16 AUG 51	MX-1450	WINZ	72.8	1.0	129	99.0
22	23 AUG 51	MX-1450	WINZ	72.8	1.0	125	99.7
23	29 AUG 51	MX-1011	WINZ	72.8	1.0	119	133.3

	ACTUAL MAX ALT	TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE
1	6.3	2.0	OK	Tularosa Peak, HAFB	12	Sampling Apparatus,DEF	
2	82.2	27.0		Parker Dam, Calif.	450	Sampling Apparatus, D	705
3	60.0	1.3	OK	10 MI SW HAFB	10	Sandbags,DF	1100
4	5.0	0.2	OK	12 MI NW HAFB	1	Oklahoma A&M Beacon, Dosimeter, ADF	---
5	67.1	2.0	OK	3 MI NW Valmont, N. M.	14	Oklahoma A&M Beacon, Dosimeter, ADF	930
6	45.0	3.5	OK	3 MI W Mayhill, N. M.	30	Canister, ADF	715
7	97.0	5.25	OK	80 MI NNE HAFB	80	Denver U,Spectrograph,AD	607
8	95.0	3.5	OK	Strip 2, HAFB	27	Canister,Dosimeter,ADF	1020
9	46.0	2.5	OK	18 MI NW HAFB	18	Canister,Dosimeter,ADF	1060
10	40.0	1.3	OK	10 MI W Hope, N. M.	75	Canister,Dosimeter,ADF	824
11	38.6	1.6	OK	22 MI NW Tularosa, N. M.	35	Aerobee Nose Cone, Beacon, AD	920
12	63.0	7.0	1 WK	Sweetwater, Texas	290	Melpar Transmitter, F	
13	63.0	15.0	1 Month	Greenville, Miss.	780	Melpar Transmitter, F	
14	63.0		1 Month	West Virginia	1300	Melpar Transmitter, F	
15	55.0	7.0	2 WKS	Aspermont, Texas	340	Melpar Transmitter, F	725
16	90.0	2.0	OK	10 MI ENE Cloudcroft,N.M.	40	ADF, Sampling Apparatus, Dosimeter	800
17	57.0	3.0	2 Months	Columbus, Miss.	900	Melpar Transmitter, F	752
18	90.0	3.0	OK	18 MI E Mayhill, N.M.	48	Sampling Apparatus, ADF	1130
19	60.0	3.3				Melpar Transmitter, F	
20	5.0	0.25	OK	HAFB	.25	Ultra Violet Spectrograph,A	---
21	97.7	5.0	OK	Near WSPG, N.M.	40	Sand Bags, ABF	1140
22	59.4	2.0	OK	Peter 15, HAFB	15	Canister, ADF	530
23	62.1	1.3	OK	La Luz, N. M.	35	ADF, Rhode Island U, Solar Constant Gear	964

RESULTS BALLOON	HAFB	DATA	*	REMARKS	HAFB
D	F	F	2	Balloon developed leak, sampler activated on impact	1
S	F	F	8	Independent ground observers saw balloon burst, aircraft search failed	2
U	F	D	1	Test for recovery techniques	3
U	F	F	1	Balloon deteriorated in storage, descended slowly	4
U	PS	S	1	Beacon batteries failed cold test, balloon descended slowly	5
U	S	F	1	Canister pressurization failure, specimens died	6
S	S	S		Total Success	7
S	S	S		Total success, highest mammal flight to date	8
D	S	F	2	Balloon damaged and patched in gusty inflation winds, failed at 46.0 K ft.	9
U	PS	F	1	Balloon burst	10
U	S	PS	1	Balloon descended slowly, 85% success estimated by contractor	11
S	S	F	6	Transmitter failed	12
S	S	F	6	Transmitter failed	13
S	S	F	6	Transmitter failed	14
S	S	S		Total success	15
S	S	F	6	Instrument operation questionable	16
S	S	S		Total success, launched into 20 knot sandstorm	17
S	S	F	6	Balloon appendix tied off, hammer fired, copper tubing not sealed	18
S	S	PS	6	Good signals, no height data	19
N	F	F	3	Load line hit telephone wire, detaching payload	20
N	F	F	3	Ballast lost on take-off, high ascent rate, balloon descended slowly	21
U	F	F	1	Balloon descended slowly	22
U	F	PS	1	Balloon burst, instrument proved workable.	23

TAPE NR	DATE	CONTRACTOR	MFG	DIAM FT	MILS	LBS	EQUIP WT LBS
24	5 SEP 51	MX-1450	WINZ	72.8	1.0	119.0	119.0
25	7 SEP 51	MX-1450	WINZ	72.8	1.0	127.0	149.3
26	8 SEP 51	MX-1450	GM	85.0	1.3	176.0	199.8
27	9 SEP 51	MX-1450	GM	85.0	1.3	176.0	199.8
28	21 SEP 51	MX-1011	WINZ	72.8	1.0	125.0	127.2
29	26 SEP 51	MX-1498	GM	72.8	1.0	125.0	66.4
30	3 OCT 51	MX-1498	GM	72.8	1.0	114.0	100.0
31	16 OCT 51	MX-1498	WINZ	45.0	1.5	59.0	150.0
32	18 OCT 51	MX-1498	WINZ	45.0	1.5	60.7	147.8
33	6 NOV 51	MX-1498	WINZ	45.0	2.0	72.9	227.8
34	10 NOV 51	MX-1498	WINZ	45.0	2.5	90.0	236.0
35	13 NOV 51	MX-1498	WINZ	45.0	3.0	100.0	240.0
36	14 NOV 51	MX-1498	WINZ	45.0	3.0	96.5	238.5
37	20 NOV 51	MX-1498	WINZ	45.0	2.5	86.5	234.2
38	28 NOV 51	MX-1450	GM	85.0	1.3	173.3	217.0
39	30 NOV 51	MX-1450	GM	85.0	1.3	176.0	196.4
40	21 DEC 51	MX-1594	GM	85.0	1.3	175.0	150.5
41	28 DEC 51	MX-1594	GM	85.0	1.0	153.0	143.5
42	23 JAN 52	MX-1594	GM	85.0	1.3	174.0	142.0
43	29 JAN 52	MX-1498	WINZ	72.8	2.5	246.0	359.0
44	2 FEB 52	MX-1498	WINZ	45.0	2.5	88.5	287.0
45	6 FEB 52	MX-1498	WINZ	45.0	2.5	88.0	288.0
46	9 FEB 52	MX-1498	WINZ	45.0	2.5	88.0	288.0
47	14 FEB 52	MX-1498	WINZ	45.0	2.5	88.0	288.0

HAFB NR	ACTUAL MAX ALT	TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE FPM
24	97.5	6.5	3 WKS	Fort Bliss Arty Rng	55	Canister, ABDF	1120
25	94.0	11.0	OK	Craig, N. M.	150	Sphere, ABDF	420
26	---	----	----			2 boxes of cosmic ray plates	---
27	54.0	1.5	1 WK	Pinon, N. M.	40	2 boxes of cosmic ray plates	782
28	96.0	16.0P				Ohio S.U. Infra-red gear AD	980
29	98.4	4.0	3 WK	Pinon, N. M.	40	Cosmic ray plates, ADF	637
30	90.0	1.75	OK	35 MI SE Hondo, N.M.	68	ADF	660
31	30.1	1.5P	4 Months	Mescalero Reservation	35	Sandbag, D	980
32	68.2	3.5		NW Cloudcroft, N. M.	25	GSAP, Command release gear, AD	900
33	13.0	1.75	OK	Ore Grande, N. M.	65	Moby Dick Model #2	100
34	66.0	35.0	2 WKS	Lake Charles, La.	820	Moby Dick Model #2	750
35	---	---				Moby Dick Model #2	---
36	58.0	15.5	1 WK	Guntersville, Ala.		Moby Dick Model #2	900
37	57.7	43.25		200 MI E Charleston,S.C.	1630	Moby Dick Model #2	490
38	15.0	0.25	OK	2 MI NE launch site	2	Cosmic Ray plates, ACB	---
39	86.4	8.0	OK	1 MI NE Hobbs AFB, N.M.	170	Cosmic Ray plates, ABD	780
40	50.0	4.0	OK	7 MI W Abilene, Texas	320	Gopher gear,GM red bag	100
41	91.0	3.2	OK	12 MI SW Hobbs, N. M.	120	Gopher gear,GM red bag	900
42	94.2	4.0				Gopher gear, AE	860
43	81.6	44.0		28.1 N 74.4 W	1860	Moby Dick Model #3	1060
44	57.3	36.0		34.4 E 73.5 W	1770	Moby Dick Model #3	760
45	54.8	9.5P			400	Moby Dick Model #3	885
46	62.0	47.25P		28.2 N 73.4 W	1910	Moby Dick Model #3	1135
47	54.8	92.0		NE Montreal, Canada	1750	Moby Dick Model #3	720

RESULTS BALLOON	HAFB	DATA	*	REMARKS
N	F	F	2	High ascent rate, balloon descended slowly after re: altitude
S	PS	PS	5	No floating altitude data, specimens survived
D	F	F	2	Wind gust destroyed balloon in platform
U	F	F	1	Balloon burst
S	PS	S		Separation failure, excellent telemetering data rec:
S	PS	S	7	Good balloon performance, despite patched holes
N	S	S		Practice Flight
S	S	S		Training Flight
S	PS	PS	8	Command separation successful, impact within 5 mile:
N	F	F	2	Attempted 10% free lift
S	S	PS	6	Ballast expended early
N	F	F	3	Load smashed on take-off
S	S	PS	6	No ballast dropped
S	S	PS	6	Only 2 hours telemetering data, doder motor apparent
N	F	F	3	Load line broke on take-off
U	F	F	1	Floated 3.5 hours, descended slowly, gear damaged or:
N	PS	F	6	Wrong payload weight received, resulting in under-ir
U	PS	PS	1	Balloon failed after floating one hour
S	F	F	8	Wrong balloon tracked by aircraft, impact near White
S	S	PS	6	Ballast valve locked open on ascent
S	S	S		Telemetering out for 11 hours
S	S	PS	6	Transmitter failed, with only 8 pounds of ballast ex
S	S	S		High ballast rate
S	S	S		Peak altitude attained on fourth day

HAFB NR	DATE	CONTRACTOR	MFG	BALLOON DIAM FT	MILS	LBS	EQUIP WT LBS
48	19 FEB 52	MX-1498	WINZ	72.8	2.5	246	360.0
49	20 FEB 52	MX-1450	GM	85.0	1.0	155.0	104.0
50	22 FEB 52	MX-1498	WINZ	72.8	2.0	246.0	360.0
51	27 FEB 52	MX-1498	WINZ	72.8	2.5	250.0	360.0
52	27 FEB 52	MX-1450	GM	85.0	1.3	160.5	109.2
53	3 MAR 52	MX-1498	WINZ	72.8	2.5	250.0	360.0
54	18 MAR 52	MX-1450	GM	85.0	1.3	160.0	161.5
55	8 APR 52	MX-1450	GM	85.0	1.3	161.5	166.2
56	15 APR 52	MX-1450	GM	85.0	1.3	162.8	175.3
57	24 APR 52	MX-1450	WINZ	72.8	1.5	160.0	128.4
58	1 MAY 52	MX-1011	WINZ	72.8	1.5	164.0	155.5
59	15 MAY 52	MX-1498	GM	85.0	1.3	162.5	174.0
60	28 MAY 52	MX-1011	WINZ	72.8	1.5	166.5	78.8
61	5 JUN 52	MX-1498	WINZ	72.8	2.0	200.0	261.0
62	10 JUN 52	MX-1450	GM	2)85.0	1.3	162.0	585.0
63	10 JUL 52	MX-1450	GM	85.0	1.3	165.0	146.0
64	11 JUL 52	MX-1498	WINZ	45.0	2.5	88.0	274.0
65	15 JUL 52	MX-1450	WINZ	72.8	1.5	162.0	177.0
66	16 JUL 52	MX-1450	WINZ	72.8	1.5	162.0	177.0
67	18 JUL 52	MX-1450	WINZ	72.8	1.5	168.0	142.0
68	13 AUG 52	MX-1498	WINZ	72.8	1.0	160.0	356.5
69	15 AUG 52	MX-1498	WINZ	72.8	1.0	158.0	350.0
70	18 AUG 52	MX-1498	GM	30.0	1.0	31.0	359.0
71	19 AUG 52	MX-1498	WINZ	72.8	1.0	160.0	350.0

	ACTUAL MAX ALT	TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	MILES	LOAD DESCRIPTION	ASCENT RATE FPM
48	74.2	48.0	OK	Hope, Kansas	600	Moby Dick Model #3	900
49	103.6	43.0	2 Months	Aguilar, Colorado	345	Cosmic ray plates, ACD, Sphere	760
50	74.2	40.0P		Gulf of California	400	Moby Dick Model #3	1170
51	74.3	62.0	1.5 Months	13 MI N Stark, La.	810	Moby Dick Model #3	900
52	54.0	1.25	1 Day	Hope, N. M.	90	Cosmic ray plates, sphere, AD	715
53	39.5	1.0	3 WKS	Hope, N. M.	80	Moby Dick Model #3	700
54	92.0	10.0	OK	5 3/4 MI NE Dora, N. M.	188	Cosmic ray plates, AE	500
55	72.3	4.0	OK	15 MI SE Caprock, N. M.	151	Cosmic ray plates, ACD	360
56	98.8	11.0	OK	15 MI SW Salinas Peak	45	Cosmic ray plates, fruit flies, ACD	827
57	87.5	28.0	4 Months	3 MI W Arrey, N. M.	75	Sphere, ACD	518
58	87.2	5.2	OK	20 MI SW Salt Flats, N.M.	85	Sampler, Rhode Island U, Solar radiation gear	950
59	99.0	23.5	2.5 Months	38 MI NE Carrizozo, N.M.	90	Fruit flies, Moby Dick dummy load	
60		3.5	OK	5 MI NE Pinon, N.M.	47	Denver U Spectrograph, AD	900
61	70.0	1.0	OK	15 MI SW Pinon, N.M.	38	Moby Dick dummy load, DE	1300
62	94.0	4.0	OK	Elephant Butte Dam, N.M.	69	500 pound barrel, ADC	730
63	100.0	10.5	OK	Gila Bend, Arizona	390	Cosmic ray plates, ACD	740
64	55.5	15.0P	1 WK	28 MI SW Corona, N.M.	80	Moby Dick dummy load, AC	
65						NYU Canister, dosimeter, ADC	---
66	92.0	10.5	OK	10 MI S Casa Grande, Ariz.	325	NYU Canister, dosimeter, ADC	680
67	95.7	11.5	OK	30 MI NE Yuma, Arizona	450	Cosmic ray plates, ACD	935
68	71.0	2.0	OK	9 MI W Tularosa Peak, N.M.	15	Moby Dick Model #4	810
69	10.5	0.25	OK	West Area, HAFB	2.5	Moby Dick Model #4	600
70	7.5	0.22	OK	Water Tower, North Area	0.3	Moby Dick Model #4	260
71	---	------					---

RESULTS BALLOON	HAFB	DATA *		REMARKS	HAFB
S	S	S		Ballast control over compensated	48
S	PS	F	4	Separation time failed at 55 minutes before cut-down time	49
S	S	S		75 pounds of ballast left, as flight left network	50
S	S	S		Ballast flow partially restricted by impurities, 49 hours contact at HAFB	51
N	F	F	2	Impact smashed payload, balloon slipped in launch platform	52
U	F	F	1	Balloon found damaged in box, load damaged on impact	53
S	PS	PS	5	Barograph lost on take-off, double theodolite data obtained	54
N	F	F	4	Premature separation	55
S	S	S		Total Success	56
S	F	F	7	Separation obscured by thunderstorm	57
S	S	PS	6	Rhode Island University radiation data intermittent above 40.0 Kilo-ft 1 sampler OK	58
S	PS	PS	7	Covered wagon launch in 17 knot wind	59
U	PS	PS	1	Minimum data requirement met	60
N	S	S		Test for covered wagon maximum inflation, high ascent rate	61
S	S	S		First HAFB cluster flight, two launching platforms used	62
S	S	S		Total Success	63
S	PS	PS		Reel and covered wagon, plus packed parachute	64
N	F	F	2	Insufficient free lift	65
S	S	F	6	AM-1 read at HAFB until separation	66
S	S	S		Longest recovery to date	67
S	S	S		Check of descent rate switch, and use of drag chute	68
N	F	PS	4	Premature squib action	69
S	S	S		Test of ascent rate switch	70
N	F	F	3	Covered wagon release failure	71

HAFB NR	DATE	CONTRACTOR	MFG	BALLOON DIAM FT	MILS	LBS	EQUIP WT LBS
72	20 AUG 52	MX-1498	WINZ	72.8	2.5	259.0	369.0
73	21 AUG 52	MX-1498	WINZ	72.8	1.5	160.0	350.0
74	23 AUG 54	MX-1498	WINZ	72.8	2.5	259.0	367.0
75	25 AUG 52	MX-1277,1011	WINZ	72.8	2.0	210.5	161.0
76	25 AUG 52	MX-1498	WINZ	45.0	2.5	96.0	267.0
77	26 AUG 52	MX-1498	WINZ	45.0	2.5	98.0	374.0
78	27 AUG 52	MX-1277,1011	WINZ	72.8	2.0	210.0	166.8
79	27 AUG 52	MX-1498	WINZ	45.0	2.5	95.0	263.0
80	28 AUG 52	MX-1594	WINZ	72.8	2)1.0	234.5	287.8
81	28 AUG 52	MX-1498	GM	30.0	1.5	31.0	372.0
82	29 AUG 52	MX-1594	WINZ	72.8	2)1.0	234.5	287.8
83	29 AUG 52	MX-1498	WINZ	45.0	2.5	93.0	432.0
84	29 AUG 52	MX-1498	WINZ	45.0	2.5	93.0	373.0
85	2 SEP 52	MX-1498	WINZ	45.0	1.5	60.0	360.0
86	2 SEP 52	MX-1498	WINZ	61.0	2.5	173.0	332.0
87	3 SEP 52	MX-1011	WINZ	72.8	2.0	210.0	130.0
88	3 SEP 52	MX-1498	WINZ	61.0	2.5	167.0	310.0
89	4 SEP 52	MX-1594	WINZ	72.8	2)1.0	234.0	288.0
90	4 SEP 52	MX-1498	WINZ	61.0	2.5	173.0	310.0
91	5 SEP 52	MX-1011	WINZ	72.8	2.0	213.0	160.3
92	5 SEP 52	MX-1498	WINZ	72.8	2.0	214.0	223.0
93	5 SEP 52	MX-1498	WINZ	45.0	2.5	94.0	266.0
94	6 SEP 52	MX-1498	WINZ	45.0	2.5	92.0	271.0
95	7 SEP 52	MX-1498	WINZ	45.0	2.5	92.0	271.0

HAFB NR	ACTUAL MAX ALT	ACTUAL TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE FPM
72	69.3	1.75	OK	10 MI N Tula Peak	20	Moby Dick Model #4	800
73	72.6	2.5	OK	San Andres Mts.,N.M.	30	Moby Dick Model #4	1000
74	71.5	1.75	OK	1 MI W Strip 2 HAFB	27	Moby Dick Model #4	
75	88.5	2.5	OK	10 MI WSW Salinas Peak	45	Sampling bottle,O.S.U. Gear	1235
76	55.0	2.0	OK	10 MI W Tula Range Camp	20	Moby Dick Model #4	835
77	36.4	1.0	OK	2 MI S Tula Peak	10	Moby Dick Model #4	
78	87.5	2.5	6 WKS	28 MI 315 Deg. HAFB	28	Sampling bottle, O.S.I. gear, DACE	630
79	56.2	22.5	3 WKS	Pringle, Texas	330	Moby Dick Model #4	744
80	----	----				Gopher package	---
81	19.9	0.33	OK	N Aero-Med Building	5	Moby Dick Model #4	850
82	83.0	5.5	OK	18 MI N San Lorenzo, N.M.	110	Gopher package	
83	19.7	0.33	OK	Near Dyvad's Airport	5	Moby Dick Model #4	630
84	55.3	60.0	5 Months	Clark, Missouri		Moby Dick Model #4	970
85	39.8	1.25	OK	10 MI SE Valmont,N. M.	20	Moby Dick Model #4	600
86	67.4	80.0P	7 WKS	South Ogema,Saskatchewan	1200	Moby Dick Model #4	926
87	89.0	2.5	OK	3 MI SE Condron Field	55	Ohio State gear	710
88	70.0	80.0	5 WKS	30 MI N Kemmerer, Wyo.	670	Moby Dick Model #4	903
89	83.0	4.0	OK	WSW Truth or Cons.,N.M.	75	Gopher package	
90	68.6	78.0P	1 Month	25 MI NW Ogden, Utah	710	Moby Dikc Model #4	766
91	89.5	3.25	OK	15 MI W Las Cruces, N.M.	60	R.I.U. Solar constant gear	943
92	67.3	2.0	3 WKS	White Sands Monument	15	Moby Dick Model #4	
93	53.0	32.0	3 WKS	37 MI N Colorado Springs	425	Moby Dick Model #4	870
94	57.0	62.0	2 WKS	Arcadia, Nebraska	730	Moby Dick Model #4	850
95	56.5	53.0	4 WKS	Aguilar, Colorado	345	Moby Dick Model #4	775

RESULTS BALLOON	HAFB	DATA	#	REMARKS
S	S	S		First balloon destroyed by covered wagon headboa lease failure
S	S	S		Good balloon performance, despite hole in neck
S	S	S		Pilot chute activated main chute after 19 second with full load
S	S	S	6	Vertical inflation of free lift
U	F	F	1	Dropped to 45,000 ft., MSL, cut by ascent rate swi
S	S	S		15 second free fall, before drag chute activated
S	PS	S,F	1	Excellent data for O.S.U., maximum altitude too lo samplers
S	S	PS	6	Transmitter failed after 11 hours
N	F	F	2	Launching platform failed before release
S	S	S		Parachute partially ripped, opening below 20.0 kil with 340 pound load
S	S	PS	6	Flight observed thru HAFB theodolite within 2 min. separation
S	S	S		20 sec. free fall with 432# package before parachut
S	S	S		First balloon destroyed, as load was hooked into ri
S	S	S		Main chute deployed after 16 seconds free fall
S	S	S		No code heard after 20 min - keying relay of transmi
S	S	S		Good telemetering data on CO_2 distribution received
S	S	S		30 pounds of ballast first night
S	S	PS	6	
S	S	S		24 pounds of ballast first night
S	S	S		Excellent solar,temperature,load inclination data rec
S	S	S		Test with no drag chute, parachute opened and failed 36 seconds free fall
S	S	S		10 knot launch
S	S	S		
S	S	S		Only continuous DF heard after 6 hours

HAFB NR	DATE	CONTRACTOR	MFG	BALLOON DIAM FT	MILS	LBS	EQUIP WT LBS
96	8 SEP 52	MX-1498	WINZ	72.8	2.5	264.0	356.0
97	9 SEP 52	MX-1011	WINZ	72.8	2.0	214.0	125.5
98	9 SEP 52	MX-1498	WINZ	72.8	2.5	254.0	359.0
99	10 SEP 52	MX-1594	WINZ	45.0	2.5	93.0	285.0
100	10 SEP 52	MX-1498	WINZ	72.8	2.5	257.0	349.0
101	11 SEP 52	MX-1011	WINZ	72.8	2.0	214.0	159.8
102	11 SEP 52	MX-1498	WINZ	72.8	2.5	258.0	372.0
103	11 SEP 52	MX-1498	WINZ	61.0	2.5	172.0	309.0
104	12 SEP 52	MX-1498	WINZ	61.0	2.5	170.0	312.0
105	13 SEP 52	MX-1498	WINZ	61.0	2.5	171.0	306.0
106	15 SEP 52	MX-1594	WINZ	45.0	1.5	60.0	225.5
107	15 SEP 52	MX-1498	WINZ	61.0	2.5	171.0	309.0
108	16 SEP 52	MX-1498	WINZ	61.0	2.5	173.0	333.0
109	23 SEP 52	MX-1277	WINZ	72.8	1.0	115.0	39.8
110	24 SEP 52	MX-1594	WINZ	72.8	2.0	232.0	896.0
111	2 OCT 52	MX-1594	WINZ	72.8	2)1.0	232.0	773.0
112	14 OCT 52	MX-1594	WINZ	72.8	2)1.0	227.0	856.5
113	22 OCT 52	MX-1277	WINZ	72.8	1.0	133.0	90.8
114	30 OCT 52	MX-1277	WINZ	72.8	1.0	115.0	97.0
115	14 NOV 52	MX-1594	WINZ	72.8	2)1.0	230.0	700.0
116	20 NOV 52	MX-1450	WINZ	72.8	1.5	168.0	182.2
117	21 NOV 52	MX-1594	WINZ	72.8	2(1.0)	230.0	680.0
118	21 NOV 52	MX-1450	GM	85.0	1.3	162.0	88.7
119	11 DEC 52	MX-1011	GM	85.0	1.3	160.0	166.3

HAFB NR	MAX ALT	TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE FPM
96	74.7	71.0		35.5 N 120.5 W	900	Moby Dick Model #4	966
97	52.4	1.5	OK	3 MI S White Sands	10	Ohio State U Gear, D	406
98	76.2	36.0P	4 Months	20 MI S Ray, Ariz.	270	Moby Dick Model #4	1030
99	60.5	6.5	OK	15 MI NW Carrizozo,N.M.	75	Gopher package, red bag	480
100	76.3	71.0	3 Months	Crown Point, N.M.	220	Moby Dick Model #4	8[illegible]
101	94.2	4.0	1 Day	Near Salinas Peak,HAFB	45	R.I.U. Solar Constant Gear,ADC	770
102	3.0	0.5	OK	6 MI NE HAFB	6	Moby Dick Model #4	
103	68.0	6.0P	3 Months	30 MI NE Prescott,Ariz.	370	Moby Dick Model #4	924
104	68.9	44.0	1 WK	Keyes, Oklahoma	360	Moby Dick Model #4	890
105	69.3	24.5	3 WKS	Covington, Tenn.	950	Moby Dick Model #4	1270
106	58.0	2.9	1 Day	Near Strip 1, HAFB	20	Gopher package, red bag	
107	68.3	40.0P	3 Months	40 MI W Carbos, Mex.	380	Moby Dick Model #4	820
108	28.3	2.5	3½ WKS	6 MI SE Mule Peak	16	Moby Dick Model #4	475
109	80.0	2.5				NYU Ozonesonde, CDE	625
110	---	---	-----	--------		Gopher package,ballast bags	---
111	67.5	40.0P				Gopher package,ballast bags	635
112	62.0	50.0P				Gopher package,ballast bags	
113	91.7	3.5	3 Days	35 MI ESE Pinon, N.M.	85	Sampler, ACD	980
114	50.8	3.0	OK	10 MI SE Carlsbad,N.M.	125	Sampler, AC	280
115	72.0	84.0	10 Days	Bridgeton, N.J.	1800	Gopher package,ballast bags	
116	88.0	3.0	5 Days	20 MI E Pinon, N.M.	75	Sky Brightness Photo-electric gear, A	750
117	72.0	36.0	1 WK	5 MI W Sallisaw,Okla.	700	Gopher package	500
118	90.0	.		40 MI NE Lovington,N.M.	200	Sampler, Command Separation,A	
119	94.0	4.5	OK	15 MI E Oro Grande, N.M.	35	Solar Constant Gear,ACD	660

RESULTS BALLOON	HAFB	DATA	*	REMARKS	HAFB
S	S	S			96
N	N	N		Appendix tied off, balloon burst	97
S	S	S		First balloon failed, holes in apex	98
S	S	S		Best data of this series, thus far	99
S	S	S		66.4 pound ballast expended 1842-0300 MST, first night	100
S	S	S		Excellent data	101
N	F	F	6	Moby Dick reel plus covered wagon, reel failed	102
S	S	S		15 knot launch, 26.4 pounds ballast expended first night	103
S	S	S		18.5 knot launch	104
S	PS	PS	2	17 knot launch, uncalibrated pressure gauge used	105
S	S	F		Command separation successful, free fall as rigging failed	106
S	S	S			107
U	S	PS	1	Side mounted packed parachute test, detailed results obscured by clouds	108
S	PS	S	8	Good telemetering data, recovery of prototype model delayed	109
N	F	F	3	Vertical inflation, load smashed on take-off	110
S	S	F	8	Vertical inflation with C-3 boom, 40 hours beacon contact at HAFB	111
S	S	F	8	Last contact in New England	112
S	S	S			113
U	F	F	1		114
S	S	F	6	Instrument failure	115
S	S	S		1 Photo-cell mounted at apex of balloon, film faint but data good	116
S	S	S			117
S	S	S		Command separation gear not recovered	118
S	S	S		Defective cap on first balloon, mazimum temperature in un-insulated aluminum box, 108 F degrees	119

HAFB NR	DATE	CONTRACTOR	MFG	BALLOON DIAM FT	MILS	LBS	EQUIP WT LBS
120	15 DEC 52	MX-1011	WINZ	72.8	1.5	160	166
121	16 DEC 52	MX-1011	GM	85	1.0	150	185
122	20 DEC 52	MX-1964	GM	20	1.5	12	74
123	30 DEC 52	MX-1594	GM	20	1.5	12	74
124	6 JAN 53	MX-1594	WINZ	45	2.5	92	428
125	9 JAN 53	MX-1594	GM	20	1.5	12	74
126	12 JAN 53	MX-1594	WINZ	45	2.5	92	435
127	12 JAN 53	MX-1594	GM	20	1.5	12	66
128	19 JAN 53	MX-1594	GM	30	3.0	49	181
129	21 JAN 53	MX-1594	GM	30	3.0	49	181
130	26 JAN 53	MX-1594	GM	48	2.5	88	496
131	12 FEB 53	MX-1450-R	GM	85	1.5	160	173
132	27 FEB 53	MX-1277	GM	85	2.0	201	94
133	12 MAR 53	MX-1450-R	WINZ	90	2.0	317	336
134	18 MAR 53	MX-1450-R	WINZ	72.8	2.0	214	259
135	20 MAR 53	MX-1450-R	WINZ	72.8	1.5	173	58
136	26 MAR 53	MX-1450-R	WINZ	72.8	1.5	167	73
137	13 APR 53	MX-1450-R	WINZ	90	2.0	322	491
138	14 APR 53	MX-1450-R	WINZ	90	2.0	313	165
139	24 APR 53	MX-1450-R	WINZ	90	2.0	318	185
140	24 APR 53	MX-1277	GM	37	2.0	60	?
141	5 MAY 53	MX-1450-R	WINZ	90	2.0	317	318
142	14 MAY 53	MX-1450-B	GM	72.8	2.5	298	966
143	19 JUN 53	MX-1450-R	WINZ	90	2.0	302	174

HAFB NR	MAX ALT	TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE FPM
120	76.6	3.6	OK	Ft Bliss Artillary Range	50	R.I.U. Solar Constant Gear	300
121	96.0	5.2	1 Day	25 MI S Pinon, N. M.	65	Denver U Spectrograph	750
122						Sand Bags	
123	37.0		2½ Months	Sierra Blanca, Texas	160	Control Box	820
124	41.0	1.5				Moby Dick Dummy Load	545
125	33.5	1.8	OK	20 MI WNW Las Cruces, N.M.	53	Moby Dick Dummy Load	380
126	49.9	1.7	OK	10 MI S Bent, N. M.	25	Moby Dick Dummy Load	815
127	41.6	1.5	OK	5 MI S Three Rivers, N.M.	27	Balloon Control Box	625
128			3 Months	Twin Buttes, HAFB	8	Balloon Control Box	
129	49.4					Balloon Control Box	
130				Eagle Nest, N.M.		Moby Dick Dummy Load	
131	96.5	24.5	9 Days	Near Milton, Fla.	1130	Aero-Medical Gondola	830
132	90.5	3.5	OK	2 MI N Hobbs AFB, N.M.	168	Sampler	745
133	84.0	38.0	1½ Days	Tuscaloosa, Ala.	1075	Moby Dick Box, Mousehouse	760
134	75.5	1.6	1 Day	5 MI E Mayhill, N. M.	45	N.Y.U. Canister	1010
135						Command Separation Gear	
136	97.6	4.0	5 Days	Sundown, Texas	225	Command Separation Gear	800
137	85.0	41.0	5 Months	Bend, Oregon	160	Aero-Medical Gondola	
138	90.4	24.0	OK	20 MI E Van Horn, Texas	132	Cosmic Ray Plates	575
139	85.5	14.3	3½ Months	58 MI NW Pecos, Texas	130	Aero-Med Gondola	488
140	83.0	1.7	1 WK	N Pinon, N. M.	45	Conductivity Meter	1100
141	86.6	45.0	6 Days	Grayham, Texas	140	Aero-Med Gondola	860
142						Moby Dick Dummy Load	
143	89.3	20.0	OK	60 MI NW Calgary, Canada	250	N.Y.U. Gondola	110

RESULTS BALLOON	HAFB	DATA *		REMARKS
P	PS	PS	1	Good data, but unsatisfactory balloon performance
S	S	S		
S	F	F	6	
S	S	S		
S	S	S		
S	F	F	6	Cluster inflated in one launch platform
S	S	PS	6	Vertical launch from Truth or Consequences Airport
S	S	S		
F	F	F	4	AM-1 failed
S	S	S		No inflation tube received with balloon
S	F	PS		Vertical Launch
S	S	S		30 Pounds ballast dropped at 80,000 ft, MSL
S	F	F		Sampler free fell - first wind screen launch
S	PS	PS	4	Moby Dick network flight, no ballast dropped
N	F	PS		Payload impact limitations discovered
S	F	F	3	Payload damaged on take-off - 10 knot wind
S	S	PS	6	10 knot wind screeen launch - a holes patched
S	F	F	7	Launched at Tillamook, Oregon
S	S	S		AM-1 heard second morning at HADC
F	F	F	7	
S	S	S		Recovery not desired
S	PS	PS	7	One speciman alive - ten hours above 80,000 feet, MSL
N	F	F	2	Balloon destroyed in 8 knot gusts
S	S	S		Great Falls, Montana - Launched during night

HAFB NR	DATE	CONTRACTOR	MFG	BALLOON DIAM FT	MILS	LBS	EQUIP WT LBS
144	23 JUN 53	MX-1450-R	WINZ	90	2.0	307	203
145	23 JUN 54	MX-1011	GM	85	1.0	145	178
146	25 JUN 53	MX-1450-R	WINZ	72.8	1.5	170	41
147	26 JUN 53	MX-1450-R	WINZ	72.8	1.5	165	43
148	1 JUL 53	MX-1277	WINZ	72.8	1.5	158	35
149	2 JUL 53	MX-1450-R	WINZ	72.8	1.5	176	183
150	14 JUL 53	MX-1011	WINZ	90	1.5	243	177
151	15 JUL 53	MX-1277	WINZ	72.8	1.5	178	26
152	16 JUL 53	MX-1277	WINZ	72.8	1.5	176	22
153	20 JUL 53	MX-1450-R	WINZ	90	1.5	240	240
154	22 JUL 53	MX-1594	GM	31	2.5	41	154
155	23 JUL 53	MX-1450-R	WINZ	90	1.5	240	240
156	22 JUL 53	MX-1594	GM	31	2.5	41	30
157	24 JUL 53	MX-1594	GM	20	1.5	12	100
158	28 JUL 53	MX-1450-B	WINZ	72.8	2.0	219	976
159	5 AUG 53	MX-1450-R	WINZ	72.8	1.5	167	223
160	7 AUG 53	MX-1450-R	WINZ	72.8	1.5	174	253
161	13 AUG 53	MX-1450-R	WINZ	72.8	1.5	167	388
162	14 AUG 53	Horizon	WINZ	72.8	1.5	160	388
163	17 AUG 53	MX-1450-R	WINZ	72.8	1.5	176	261
164	19 AUG 53	MX-1011	WINZ	90	1.5	239	150
165	25 AUG 53	MX-1011	WINZ	90	1.5	240	154
166	27 AUG 53	MX-1011	WINZ	90	1.5	239	154
167	1 SEP 53	MX-1011	WINZ	90	1.5	234	159

[illegible]	ACTUAL MAX ALT	ACTUAL TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE FPM
[illegible]	109.5	34.0	OK	Steptoe, Wash.	235	N. Y. U. Gondola	502
145						R.I.U. Solar Constant Gear	530
146	98.4		2¼ Months	25 MI W T or C, N.M.	85	Command Separation Gear	815
147	95.9	3.0	OK	3 MI N Tularosa Peak, N.M.	15	Command Separation Gear	648
148		2.5		Near Salinas Peak, N.M.	40	N.Y.U. Ozonesonde	
149						Sand Bags, Cosmic Ray Plates	
150	98.8	4.0	OK	10 MI E Hurley, N. M.	107	Solar Constant Gear, R.I.U.	937
151	35.0	1.6		WSPG	37	Conductivity Meter	1000
152	85.0	1.8	1 WK	S of Lake Lucero, HAFB	23	Conductivity Meter	1000
153	30.0	30.0		100 MI W Cranbrook, B.C.	320	Aero-Med Gondola	645
154	46.0	2.0				Dummy Cylinder	820
155						Aero-Med Gondola	580
156			2 Months	WSPG and HAFB Range	15	Red Bag	
157						Red Bag	
158	6.0	1.75	OK	25 MI NW HAFB	25	Dummy Cylinder	
159		8.2	OK	20 MI SW Safford, Ariz.	226	Sky Brightness Gear	
160						Sky Brightness Gear	
161	5.0	0.2	OK	Near Aero-Med Building	1	Sky Brightness Gear	
162	83.0	18.2	5 Months	15 MI W Collidge Dam Ariz.	265	A.P.G. Cylinder	750
163	77.9	8.5	9 Months	9 MI NW Silver City, N.M.	130	Sky Brightness Gear	
164	100.0	3.0	3 Days	13 MI N Hatch, N. M.	62	Ohio State U Gear	370
165	107.3	3.0	2 Days	15 MI S Engle, N.M.	52	Ohio State U Gear	915
166						Ohio State U Gear	
167	104.3	3.2	OK	2 MI NE Engle, N. M.	58	Ohio State U Gear	960

RESULTS BALLOON	HAFB	DATA	#	REMARKS	HAFB
S	S	S		Altitude record for Unit - Great Falls, Montana launch	144
S	F	F	4	Separation failure	145
S	S	S			146
S	S	S		Command cut-down successful	147
S	PS	PS	3	Payload damged on take-off	148
S	F	F	4	AM-1 transmitter failed after 15.5 hours	149
S	S	S		103 mile command cut-down	150
S	S	PS	6	Conductivity data only to 30,000 feet, MSL	151
S	S	S			152
S	F	F	8	Parachute tracked to 10,000 feet, MSL	153
S	S	S			154
	F	F	8	Great Falls, Montana launch	155
S	S	S		Vertical Inflation	156
S	S	S		Launched by crew of trainees	157
N	PS	PS	2	10% free lift insufficient in pre-dawn launch	158
S	S	S		8 pound photo tube on balloon apex	159
S	F	F		Cut-down failure	160
N	F	F	1	Hole in balloon	161
S	S	S		Cut-down failure but data good	162
S	F	F	9	Payload free-fell	163
S	S	S		Impact near peak in Caballo Mountains	164
S	S	PS	6		165
S	S	S		Separation failure	166
S	S	S		Payload at HAFB 1¼ hours after impact	167

HAFB NR	DATE	CONTRACTOR	MFG	BALLOON DIAM FT	MILS	LBS	EQUIP WT LBS
168	16 SEP 53	MX-1450-B	WINZ	72.8	2.0	241	972
169	21 SEP 53	MX-1450-R	WINZ	90	2.0	322	300
170	29 SEP 53	MX-1450-B	WINZ	72.8	2.0	241	1012
171	2 OCT 53	MX-1450-B	WINZ	90	2.0	337	1246
172	15 OCT 53	MX-1450-B	WINZ	72.8	2.0	240	1042
173	21 OCT 53	MX-1277	D&A	J-2400			18
174	26 OCT 53	MX-1277	WINZ	83.3	2.0	218	27
175	27 OCT 53	MX-1450-B	WINZ	116	2.5	690	1002
176	27 OCT 53	MX-1277	WINZ	61	2.5	173	20
177	30 OCT 53	MX-1277	WINZ	83.3	2.0	215	26
178	30 OCT 53	MX-1277	WINZ	90	1.5	244	30
179	10 NOV 53	MX-1450-B	WINZ	72.8	2.0	240	---
180	13 NOV 53	MX-1450-B	WINZ	72.8	2.0	251	960
181	17 NOV 53	MX-1277	WINZ	90	2.0	313	138
182	20 NOV 53	MX-1277	WINZ	90	1.5	237	184
183	7 DEC 53	MX-1450-B	WINZ	94	2x 1.5	466	1100
184	8 DEC 53	MX-1277	WINZ	83.3	2.0	225	176
185	10 DEC 53	MX-1277	WINZ	90	1.0	183	150
186	15 DEC 53	MX-1277	WINZ	83.3	2.0	226	154
187	16 DEC 53	MX-1450-R	WINZ	90	2.0	322	239
188	6 JAN 54	MX-1277	WINZ	90	2.0	320	182
189	14 JAN 54	MX-1277	WINZ	45	2.5	95	125
190	21 JAN 54	MX-1277	WINZ	90	2.0	292	218
191	22 JAN 54	MX-1450-B	WINZ	72.8	2.0	250	1129

HAFB NR	MAX ALT	TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE FPM
168	63.5	3.7	OK	6.2 MI SSW Valmont,N.M.	15	Dummy Cylinder	780
169	90.6	15.0P	10 Days	W of T or C, N. M.	85	N.Y.U. Canister, red bag	880
170	64.9	6.2	OK	35 MI SSE Vaughn, N.M.	109	Dummy cylinder	712
171	55.0	1.1		Near Ruidosa, N.M.	35	Dummy Cylinder	790
172	62.7	35.0P	8 Months	Saltillo, Mexico	630	Dummy Cylinder	
173	73.0	3.4				Conductivity Meter	
174	76.0	2.5	11 Days	15 MI E Dunken, N.M.	70	Conductivity Meter	780
175	81.6	50.0P				50 gallon drum	
176	83.0	2.7				Conductivity Meter	1000
177	91.0	2.9		10 MI E Cloudcroft,N.M.	31	Conductivity Meter	1000
178	105.5	1.7	8 Days	Pinon, N.M.	45	Conductivity Meter	1250
179						50 gallon drum	
180	64.2	2.5	OK	10 MI S Ruidosa, N.M.	45	50 gallon drum	745
181	77.3	1.8	1 Day	10 MI S Sacramento Peak,N.M.	21	Cylinder Sampler	895
182	97.0	4.0	OK	12 MI N Denver City, Tex.	200	CO_2 and C^{14} Sampler	
183	12.0	0.5	OK	4 MI NW Alamogordo,N.M.	7	Parachute Test Gondola	
184	89.0	8.1	OK	30 MI N Hondo, N.M.	85	AEC Cylinder Sampler	940
185		1.0	OK	7 MI SE Cloudcroft, N.M.	25	AEC Cylinder Sampler	
186	92.7	8.1	OK	10 MI E Heathden, N.M.	44	AEC Cylinder Sampler	700
187	97.5	12.0	1 Day	37 MI E El Paso, Texas	72	Aero-Med Gondola	708
188	95.0	8.0	OK	33 MI SE Hobbs, N.M.	205	AEC Cylinder Sampler	705
189	71.5	15.0	18 Days	Masselyn, Ohio	1400	Winzen Balloon Control Inst.	
190	95.0	3.0	OK	17 MI S Artesia, N.M.	100	Sky Brightness Gear	750
191	58.5	3.5	OK	15 MI ENE Roswell, N.M.	105	Parachute test gondola	300

RESULTS BALLOON	HAFB	DATA	*	REMARKS	HAFB
S	S	S		First shroud launch	168
S	F	F	8	14 knot launch - some plates exposed	169
S	S	S		3.7 knots during inflation	170
N	PS	PS	2	Balloon burst, minimum temperature	171
S	PS	PS	5		172
PS	PS	PS	1	Highest conductivity data to date	173
N	PS	PS	2	Sunset on balloon during ascent	174
S	PS	S	8	Possible radar fix over London, England	175
S	S	S			176
S	S	S		Data up to 89,000 feet, MSL	177
S	S	S		Platform launch - appendix tied off	178
N	F	F		Hole discovered after removal of reefer	179
N	PS	PS	2	Balloon apparently failed at altitude	180
N	N	F	6	Premature cut-down by contractor's gear	181
S	S	S		Radio van first used for relay station	182
N	S	F	6		183
S	S	S			184
F	N	F	1	Covered Wagon launch	185
S	S	F			186
N	S	S		Command cut-down	187
S	S	S		Covered Wagon launch	188
S	S	S		Test of Winzen Instrumentation Package	189
S	S	F	6	Power pack failure	190
S	S	S		Command separation at 115 miles	191

HAFB NR	DATE	CONTRACTOR	MFG	DIAM FT	BALLOON MILS	LBS	EQUIP WT LBS
192	27 JAN 54	MX-1277	WINZ	90	2.0	330	226
193	28 JAN 54	MX-1277	WINZ	92.5	2.0	340	800
194	2 FEB 54	MX-1277	WINZ	45	2.5	95	57
195	3 FEB 54	MX-1277	WINZ	83.3	2.0	228	178
196	5 FEB 54	MX-1277	WINZ	92.5	2.0	343	800
197	10 FEB 54	MX-1277	WINZ	116	1.5	390	176
198	11 FEB 54	MX-1450-R	WINZ	72.8	1.5	173	65
199	23 FEB 54	MX-1450-R	WINZ	90	2.0	322	320
200	3 MAR 54	MX-1277	WINZ	83.3	2.0	217	132
201	5 MAR 54	MX-1450-R	WINZ	72.8	1.5	173	120
202	12 MAR 54	MX-1450-R	WINZ	90	2.0	320	310
203	16 MAR 54	MX-1277	WINZ	83.3	2.0	128	239
204	18 MAR 54	FDL	GM	30	2.0	49	48
205	26 MAR 54	MX-1277	WINZ	83.3	2.0	219	156
206	1 APR 54	MX-1277	WINZ	83.3	2.0	224	149
207	6 APR 54	MX-1277	WINZ	83.3	2.0	220	151
208	6 APR 54	FDL	GM	48	2.0	87	45
209	15 APR 54	MX-1277	WINZ	83.3	2.0	221	147
210	19 APR 54	MX-1450-R	WINZ	72.8	1.5	177	125
211	22 APR 54	MX-1277	WINZ	83.3	2.0	235	153
212	27 APR 54	MX-1277	WINZ	83.3	2.0	217	144
213	27 APR 54	MX-1450-R	WINZ	72.8	1.5	226	200
214	30 APR 54	Horizon	WINZ	116	2.0	497	500
215	3 MAY 54	MX-1277	WINZ	83.3	2.0	246	151
216	7 MAY 54	MX-1011	WINZ	90	2.0	314	252

HAFB NR	MAX ALT	ACTUAL TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE FPM
192	90.0	2.6	OK	15 MI NNW Artesia,N.M.	93	Sky Brightness Gear	925
193	75.0	3.75	OK	18 MI S Carlsbad,N.M.	129	Dummy Cylinder	
194	55.3	1.0	N	Near Mule Peak	17	Red bag - 2 radar targets	1045
195	87.0	7.4	OK	16 MI S Hope, N.M.	80	AEC Cylinder samplers	904
196	70.6	2.7	OK	8 MI S Escondida, N.M.	27	Moby Dick Box	660
197	101.8	8.5	4 WKS	5 MI NE Fluvanna, Tex.	290	AEC Cylinder samplers	665
198	92.0	2.5	N	Near Artesia, N.M.	100	Dummy Load	750
199	89.0	24.0	1 Day	10 MI SW Eldorado, Tex.	347	N.Y.U. Canister	770
200	89.5	9.0	1½ Days	Twin Buttes, HAFB	9	AEC Cylinder Sampler	620
201	90.0	12.0	6 Days	8 MI NW Kermit, Texas	180	Balloon control box,camera	
202	85.0	27.7	2 Months	20 MI E Paris, Texas	575	N.Y.U. canister	170
203	89.4	38.0P		Portugal		AEC Cylinder Sampler	825
204		2.5	N			Painted Stove Pipes	
205	90.0	8.5	3 Days	8 MI E Memphis, Tex.	350	AEC Cylinder Sampler	1560
206	94.2	8.6	1½ Days	2 MI NE Gould, Okla.	374	AEC Cylinder Sampler	750
207	87.0	8.4	2 Days	18 MI ESE Jal, N.M.	190	AEC Cylinder Sampler	1430
208	77.0	2.5	N			Painted Stove Pipes	
209	86.5	8.4	OK	18 MI ENE Artesia,N.M.	116	AEC Cylinder Sampler	480
210		3.0	OK	20 MI N Dunken, N.M.	92	Control Box, camera, reel, antenna	
211	83.0	8.2	OK	20 MI E Roswell, N.M.	50	AEC Cylinder Sampler	540
212	85.9	8.2	OK	15 MI SE Salt Flats,N.M.	101	AEC Cylinder Sampler	1450
213	3.0	0.1	OK	Near Launch Area	1	Balloon Control Box	
214	93.5	6.7	OK	40 MI NNE Roswell,N.M.	130	Horizon Cylinder	645
215	92.0	8.5	OK	4 MI SW Escondida,N.M.	19	Cylinder Sampler	1100
216	98.0	2.7	OK	20 MI S Pinon, N.M.	63	Solar Constant Gear	450

RESULTS BALLOON	HAFB	DATA	*	REMARKS	HAFB
S	S	S		Recovery 47 minutes after impact	192
S	S	PS	9	Command separation	193
N	N	PS	6	High ascent rate test	194
S	S	S		Parachute tracked from HAFB for 10 minutes	195
S	S	S		Command Separation	196
S	F	F	6		197
S	S	PS	6	Launch and parachute test, 6 knots	198
N	PS	PS	3	Balloon damaged on take-off	199
S	S	S		51 Hours transmission from 24 hour pack	200
N	PS	PS		Inflation in gusts to 30 mph - modified shroud technique	201
S	F	F	4	Early cut-down	202
S	F	F	8	Tracked by aircraft to Georgia coast	203
S	S	PS	6	Askania Test	204
S	S	S		Impact 20 miles from Radio van	205
S	S	S		Aircraft saw separation - missed parachute	206
S	S	S		Panel truck saw parachute descend	207
S	S	S			208
S	S	S			209
S	PS	PS	4	Parachute opened at altitude, delayed opening desired	210
S	S	S			211
S	S	S		Recovered directly by the L-20 aircraft	212
S	S	S		Launch cart test	213
S	S	S		Command cut-down because of approaching clouds	214
S	S	S		Direct recovery by L-20 tracking aircraft	215
F	F	F	1,7	Film spoiled by high temperatures	216

HAFB NR	DATE	CONTRACTOR	MFG	BALLOON DIAM FT	MILS	LBS	EQUIP WT LBS
217	11 MAY 54	Horizon	WINZ	116	2.0	487	495
218	12 MAY 54	MX-1011	WINZ	92.5	1.5	242	244
219	12 MAY 54	MX-1277	WINZ	83.3	2.0	219	145
220	20 MAY 54	MX-1011	WINZ	90.0	2.0	324	248
221	24 MAY 54	MX-1277	WINZ	83.3	2.0	223	145
222	25 MAY 54	MX-1277	WINZ	83.3	2.0	220	145
223	27 MAY 54	MX-1450-B	WINZ	72.8	1.0	175	1112
224	28 MAY 54	MX-1277	WINZ	83.3	2.0	227	152
225	1 JUN 54	FDL	GM	49	2.0	88	104
226	2 JUN 54	MX-1277	WINZ	83.3	2.0	219	155
227	8 JUN 54	MX-1277	WINZ	83.3	2.0	220	154
228	11 JUN 54	FDL	WINZ	49.9	2.0	88	51
229	14 JUN 54	MX-1277	WINZ	83.3	2.0	213	164
230	17 JUN 54	MX-1277	WINZ	92.5	1.5	254	247
231	18 JUN 54	MX-1277	WINZ	90.0	2.0	344	287
232	18 JUN 54	MX-1277	WINZ	92.5	1.5	257	247
233	22 JUN 54	MX-1277	WINZ	90.0	2.0	338	224
234	22 JUN 54	MX-1277	WINZ	83.3	2.0	220	161
235	23 JUN 54	MX-1450-B	WINZ	45	2.5	95	432
236	28 JUN 54	MX-1450-B	WINZ	49.2	2.0	89	422
237	29 JUN 54	MX-1277	WINZ	83.3	2.0	228	155
238	30 JUN 54	MX-1450-B	WINZ	61	1.5	128	441
239	7 JUL 54	MX-1277	WINZ	83.3	2.0	224	160
240	13 JUL 54	MX-1450-B	WINZ	116	2.0	399	1300
241	14 JUL 54	MX-1450-R	WINZ	90	2x 1.0	326	261

HAFB NR	ACTUAL MAX ALT	ACTUAL TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE FPM
217		30.0P				Horizon (APG) Cylinder	
218		3.5	1 Day	17 MI SE Oro Grande,N.M.	47	R.I.U. Solar Constant Gear	
219	85.0	8.2	OK	15 MI NE Organ, N.M.	28	AEC Cylinder Samplers	645
220	93.0	3.6	OK	14 MI SSE Skillet Knob	27	R.I.U. Solar Constant Gear	665
221	0.5	0.4	OK	4 MI W Launch Area	4	AEC Cylinder Sampler	
222	87.2	9.2	1 Day	25 MI NW Salinas Peak	61	AEC Cylinder Sampler	710
223	50.7	4.0	OK	12 MI ENE Carlsbad,N.M.	110	Dummy Cylinder	200
224	85.0	8.4	OK	4 MI SE Wood, N.M.	33	AEC Cylinder Sampler	790
225		1.5				Stove Pipes	
226	94.2	8.0	OK	40 MI WNW HAFB	40	AEC Cylinder Samplers	800
227	94.2	8.4	4 Days	40 MI NW T or C, N.M.	112	AEC Cylinder Samplers	1140
228						Six stove pipes	911
229	83.5	7.3	1 Day	10 MI SE Ruidosa, N.M.	43	AEC Cylinder Samplers	480
230	2.3	0.5	OK	10 MI N HAFB	10	Sky Brightness gear, apex gimbel	
231						Denver U Sun Seeker	620
232		36.0P				Sky Brightness gear	
233						Sky Brightness gear	
234	82.5	8.2	7½ WKS	Vicinity Collidge Dam,Ariz.	250	AEC Cylinder Sampler	705
235	0.1		OK	Wind Screen	0	Anthropomorphic Dummy	
236		3.9	OK	Mayhill, N.M.	36	Anthropomorphic Dummy	
237	87.0	8.4	OK	23 MI N Soloman,Ariz.	208	AEC Cylinder Sampler	765
238	48.9	3.0	OK	10 MI SSW HAFB	10	Anthropomorphic Dummy	290
239	85.0	8.4	3 Days	6 MI E Tombstone, Ariz.	240	AEC Cylinder Samplers	1000
240	1.0	0.3	OK	2 MI N Wind Screen	2	Parachute Test Gondola	
241	94.0	2.2	OK	8 MI NNW Hatch, N.M.	67	Aero-Med animal gondola	830

RESULTS BALLOON	HAFB	DATA	*	REMARKS	HAFB
S				Lead hit on take-off	217
F	S	PS	1	Balloon failed while floating	218
S	S	S			219
S	S	S		Gear returned 75 minutes after impact	220
N	F	F	2	Insufficient free lift	221
S	S	S		Impact in lava beds	222
S	S	S		6.1 knots during inflation - Nylon shroud cap	223
S	S	S			224
F	N	F	1		225
S	S	S		Panel recovery as transmitter put out on ground	225
S	S	S		Impact in rugged terrain	227
S	S	S		Duct balloon, photo-theodolite data to 30,000 feet	228
S	S	S			229
N	F	F	2		230
S					231
S					232
S					233
S	S	S			234
N	F	F	2	Insufficient free lift	235
S	S	F	6	Instrumentation kit released too early	236
S	S	S			237
S	PS	PS	2,6		238
S	S	S		Modified Covered Wagon Launch	239
D	F	F	1	Holes in balloon	240
S	S	S		Baseball parachute test-command separation	241

HAFB NR	DATE	CONTRACTOR	MFG	BALLOON DIAM FT	MILS	LBS	EQUIP WT LBS	
242	15 JUL 54	MX-1277	GM	37.4	1.5	55	166	
243	23 JUL 54	MX-1277	WINZ	83.3	2.0	252	189	
244	27 JUL 54	MX-1450-B	WINZ	90.0	2.0	330	1300	
245	28 JUL 54	MX-1277	WINZ	83.3	2.0	252	180	
246	30 JUL 54	MX-1277	WINZ	83.3	2.0	225	188	
247	5 AUG 54	MX-1277	WINZ	83.3	2.0	216	191	
248	9 AUG 54	MX-1277	WINZ	83.3	2.0		194	
249	17 AUG 54	MX-1450-B	WINZ	92.5	2.0	340	1300	
250	2 SEP 54	MX-1450-R	WINZ	90	2.0	320	170	
251	9 SEP 54	MX-1011	WINZ	92.5	2.0	347	245	
252	16 SEP 54	MX-1011	WINZ	92.5	2.0	330	248	
253	17 SEP 54	MX-1011	WINZ	92.5	2.0	353	240	
254	21 SEP 54	MX-1277	WINZ	75	2.0	229	137	07:57 to 1240 amb temp test
255	22 SEP 54	MX-1011	WINZ	92.5	2.0	350	240	
256	23 SEP 54	MX-1011	WINZ	90.0	2.0	329	245	
257	28 SEP 54	MX-1011	WINZ	92.5	1.5	260	396	
258	12 OCT 54	MX-1450-R	WINZ	120.8	1.5	394	433	

260 25 Oct 54 - camera started at launch

272 27 Jan 55 [illegible]

HAFB NR	MAX ALT	TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE FPM
242		1.2	OK			AEC Cylinder Sampler	
243	85.9	2.4	2 Months	10 MI NNW T or C, N.M.	78	Ohio State U Gear	830
244	50.3	1.3	1 Day	15 MI WNW HAFB	15	Parachute Test Gondola	900
245	88.0	2.5	OK	2 MI N of Nutt, N.M.	80	O.S.U. CO_2 gear	935
246	83.5	3.3	OK	5 MI E of Arrey, N.M.	68	O.S.U. CO_2 gear	840
247	1.0	0.2	OK	Wind Screen Area	1	O.S.U. CO_2 gear	
248		2.4	OK	23 MI NW HAFB	23	O.S.U. CO_2 gear	
249	0.5	0.3	OK	N of Wind Screen area	4	Parachute Test Gondola	915
250	95.8	2.9	1 Day	8 MI S T or C, N.M.	70	Dummy Animal Gondola	
251	87.5	4.3	OK	6 MI WNW Hatch, N.M.	68	R.I.U. Solar Constant Gear	825
252		2.4	1 Day	3 MI SE Dunken, N.M.	50	R.I.U. Solar Constant Gear	730
253				Launch Area	0	R.I.U. Solar Constant Gear	
254	91.1	8.2	OK	5 MI SSE Hurley, N.M.	116	Radar Transpender - plates	900
255	92.5	4.5	OK	Near Elephant Butte Dam, N.M.	68	R.I.U. Solar Constant gear	900
256	98.7	5.1	OK	10 MI NW T or C, N.M.	78	R.I.U. Solar Constant Gear	
257		6.0	OK	3 MI E Bent, N.M.	26	2 R.I.U. Packages	850
258		27.0	OK	20 MI WSW Roswell, N.M.	80	Aero-Med Gondola, UCLA plates	820

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RESULTS BALLOON	HAFB	DATA	*	REMARKS	HAFB
N	F	F			242
S					243
N	PS	PS	2	Minimum temperature -78 degrees C., balloon burst	244
S	S	S		Minimum temperature -76 degrees C at 53,000 feet, MSL	245
S	S	S			246
D	F	F	3	Balloon tore as covered wagon release failed	247
S	S	S		Good data on descent	248
D	N	F	1	Balloon descended quickly	249
S	S	S		Photographic data of flat circular chute performance	250
S	S	S		Impact 5 miles from Radio Relay Van	251
F	F	F	1	-74 degrees C at tropopause	252
N	F	F	3	Launch failure in turbulance at base of inversion	253
S	S	S		Beacon failed at 44,000 feet, MSL	254
S	S	F	6	Winzen command receiver failed	255
S	S	S			256
S	PS	PS	3	Bottom unit damaged on take-off	257
S	S	S		Balloon near full moon outshone Polaris	258

HAFB NR	DATE	CONTRACTOR	MFG	BALLOON DIAM FT	BALLOON MILS	BALLOON LBS	EQUIP WT LBS

HAFB NR	ACTUAL MAX ALT	TOTAL HOURS	RECOVERY TIME	IMPACT LOCATION	HDO MILES	LOAD DESCRIPTION	ASCENT RATE FPM

RESULTS BALLOON	HAFB	DATA *	REMARKS	HAFB

SUMMATION FOR 258 FLIGHTS

1. 69,054 pounds (34.5 tons) of equipment have been flown.
2. Flights have been aloft for a total of 3,191 hours, or 133 days, or 19 weeks.
3. Out of the 258 flights, 227 have been recovered or 88%.
4. Considering the accumulation of the desired data as the end point, there have been 154 total successes and 204 total or partial successes.
5. The heaviest load launched has been 1300 pounds.
6. 109,500 feet, MSL, is the highest altitude obtained.
7. Four days is the longest confirmed flight duration.

LEGEND

COLUMN TITLE	EXPLANATION
HAFB NR	Balloon Unit flight operations are listed chronologically. When a balloon is destroyed during inflation or launching, or the launching is unsuccessful in any respect, the operation is not given a flight number unless the contractor's gear has been damaged in such a manner that it cannot be readied for another launch the same day. Other operations not given a flight number are tests where the balloon is inflated but not released or allowed only to ascend a few thousand feet. Approximately 40 such tests have been made to date.
CONTRACTOR	MX-1277 - AFCRC Atmospheric Sampling Projects MX-1011 - Aerobee contractors MX-1498 - Moby Dick wind field studies MX-1594 - Project Gopher Project Horizon - Aberdeen Proving Ground MX-1280 - Atmospheric Radiation Detection MX-1450-R - Physiology of Rocket Flight MX-1450-B - Bio-Physics of Escape
BALLOON MFG	GM - General Mills, Incorporated WINZ - Winzen Research, Incorporated
MILS	Balloon material thickness. One mil equals .001 inches.
MAX ALTITUDE	Maximum altitude attained by the payload during any part of the flight. This is usually a pressure which is converted to kilo-feet by employing the pressure height curve from the radiosonde ascent closest in both time and space to the non-extensible balloon flight. A minority of the altitudes are from radar or optical data. Unballasted polyethylene balloons employing tapes will drop during the daytime at an average rate of 1000 feet per hour after attaining the maximum altitude following the ascent.
TOTAL HOURS	Duration from take-off to impact of the payload. A "P" following the number indicates that the recorded duration is from take-off to time of last report.

RECOVERY TIME	Indicated the duration from impact to the time when the gear is delivered back to HAFB. OK indicated recovery on the same day as impact.
HDO MILES	Horizontal distance from the launch point to the impact point.
LOAD DESCRIPTION	Usually includes only the data seeking gear. All flights, however, are flown with some sort of a balloon control box, a parachute, and sometimes radar targets and banners.
EQUIP WT	Includes the weight of everything flown except the balloon.
ASCENT RATE	Average vertical speed in feet per minute from the surface to the floating altitude or a point as much as 20,000 feet below the floating altitude where the balloon begins to slow down markedly.
BALLOON RESULTS	D - Balloon damaged S - Satisfactory balloon performance U or F - Unsatisfactory balloon performance N - Balloon not subjected to a valid test
HAFB RESULTS	S - The necessary time, altitude and recovery support required by the contractor to gather all his desired data was supplied by HAFB PS - Part of the same required support was supplied to the contractor enabling his to gather useful data. F - No useful data obtained by the contractor because of insufficient altitude, time, or recovery support.
CONTRACTOR RESULTS	S - Sufficient measurements of desired data obtained but pertinent PS - Limited data obtained F - No useful data obtained on the phenomena which was to be measured
(*) Sources of Failure or Only Partial Success	1 - Unsatisfactory balloon performance with no evidence of damage by handling or launch operations 2 - Inflation 3 - Launching Operation 4 - Balloon control instrumentation (HAFB) 5 - Insufficient altitude data 6 - Contractor or payload instrumentation 7 - Recovery too late 8 - Equipment still lost - delayed recovery can mean success. 9 - Parachute or rigging failure

GROUND TESTS

NR	DATE	CONTRACTOR	BALLOON MFG	BALLOON DIAM	BALLOON MILS	PAYLOAD POUNDS	MAX WIND KNOTS	TEST DESCRIPTION
T-1	10 OCT 51	MX-1498	GM	20	1.5			Multiple hold down lines
T-2	6 DEC 51	MX-1498	GM	20	1.5	40	20	First Covered Wagon Test
T-3	10 DEC 51	MX-1498	WINZ	45	2.5			Apex tied to Aerobee tower
T-4	12 DEC 51	MX-1498	WINZ	45				Covered Wagon Test
T-5	17 DEC 51	MX-1498	WINZ	45				Covered Wagon Test
T-6	20 DEC 51	MX-1498	WINZ	45				Covered Wagon Test
T-7	28 DEC 51	MX-1498	GM	85				Covered Wagon maximum inflation test
T-8	7 FEB 52	MX-1498	WINZ	45	2.5			Reel Inflation
T-9	5 MAY 52	MX-1498	WINZ	45	2.5			Packed Parachute Test
T-10	6 MAY 52	MX-1498	WINZ	45	2.5	230	7	Covered Wagon release test
T-11	8 MAY 52	MX-1498	WINZ	72.8	1.0	230	15	Covered Wagon release test
T-12	3 JUN 52	MX-1498	WINZ	45	1.5			Reel Inflation
T-13	4 JUN 52	MX-1498						Reel plus Covered Wagon
T-14	12 JUN 52	MX-1498	GM	20	1.5			Reel plus Covered Wagon
T-15	1 JUL 52	MX-1498	WINZ	45	2.5			Covered Wagon center release
T-16	14 JUL 52	MX-1498	GM	30	2.0		17	Covered Wagon wind Test
T-17	17 JUL 52	MX-1498	WINZ	45	1.5		19	Covered Wagon wind test
T-18	23 JUL 52	MX-1498	WINZ	45	2.5			Covered Wagon test
T-19	13 OCT 52	MX-1594	WINZ	72.8	2.0		5	Vertical inflation
T-20	16 JUN 53	MX-1450B	GM	20	1.5		6	Shroud test
T-21	31 JUL 53	MX-1450B	GM	20	1.5		12	Shroud test

NR	DATE	CONTRACTOR	BALLOON MFG	BALLOON DIAM	BALLOON MILS	PAYLOAD POUNDS	MAX WIND KNOTS	TEST DESCRIPTION
T-22	11 SEP 53	MX-1450B	WINZ	72.8	2.0		2	Shroud Test
T-23	14 OCT 53	MX-1450B	WINZ	61	2.0		5	Shroud Test
T-24	JAN 54	MX-1450R	WINZ	72.8	1.5		30	Shroud plus launch platform elevated
T-25	FEB 54	MX-1450R	WINZ	72.8	1.5		10	Package on crane
T-26	FEB 54	MX-1450R	WINZ	72.8	1.5		5	Shroud with winch release
T-27	JUN 54	MX-1450B	WINZ	72.8	2.0			Shroud test
T-28	6 OCT 54	MX-1450R	WINZ	92.5	2.0	715	5	Launch platform plus shroud
T-29	16 NOV 54	HORIZON	WINZ	92.5	2.0	500	3	